ORDA Parts Explained

This paper briefly describes each part and its purpose in the RDA.

- Router 90A4
  - The router contains the CSU for communication with the RPG. It limits access across the T1 for security
- LAN Switch 90A5
  - The LAN switch provides TCP/IP communication for ORDA components
  - Originally, this was an unmanaged switch. However, problems with speed negotiation caused us to reevaluate, and are using a managed switch.
- Remote Access Server / Console Server 90A
  - Provides dial in access to the RDA equipment through a remote HCI
  - Provides out-of-bandwidth in management access to APC power administrator
  - Contains firewall and intrusion detection.
- Power Manager 90A7
  - The APC Power Administrator controls AC power to all the processing components in the RDA
  - Facilitates component power off/on cycling over the LAN interface
  - In NWS Redundant, it controls cabinet blowers, the DAU, and the critical contactor so ORDA can replicate legacy channel control
- KVM/Monitor 90A10
  - An 8 port KVM and monitor/keyboard/trackball assembly
  - Local user interface to the RDA processors
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- RCP8/RCW 90A11
  - Radar Controller
  - Provides RS-232 interface to DAU & DCU
  - Connects to RPG and RMS
  - SNMP NMS
  - Part of all ORDA Networks
- RVP8 90A12
  - Processes radar video from digitized IF to RVW
- Interface Panel 90A
  - Interfaces all signals between SIGMET equipment and WSR-88D, except those for the IFD
  - All signals lightning protected by Tranzorbs
  - An active panel, provides maintenance feedback on it's performance
  - Supplies +5V for Receiver Protector
  - Programmable inputs
  - Programmable coaxial test points
  - Multiplexes analog signals, sends output of 4A29, Log Detector, to IO62 card on RVP8 for A/D Conversion
- UPS 90A18
  - Provides AC power to processors during power interruptions in case the TPS is off-line
  - Allows the processors to gracefully shutdown
- IFD 4A38
  - Digitizes receiver IF at 72 MHz
- Coupler 4DC3
  - Splits the STALO signal between the 4A5 Preamp Mixer and the Burst Mixer (new component)
  - Originally we planned to use a 3dB splitter, but it reduced the STALO signal to the 4A5 Preamp Mixer more than we liked, so we decided to use a 6dB coupler so the STALO to the 4A5 would have a loss around 1.6dB instead of 3.5dB

- Burst Mixer 4A39
  - Mixes a sample of the transmitted burst with the STALO to get an IF Burst Pulse so it can be digitized by the IFD
  - Provides phase locking to less than 0.1 degrees
- IF Amplifier 4AR1
  - Boosts IF burst sample to usable levels for IFD
  - Added when we discovered the initial burst pulse was saturating the Burst Mixer. Lowering the signal level into the Burst Mixer meant we had to increase its level after the mixer.
- Attenuators 4ATxx
  - 4 SMA attenuators for IF and RF to reduce signal power to acceptable levels for the IFD
- RF cables 4Wxxx
  - Semi-rigid SMA coaxial cables for low loss and high isolation
  - Semi-rigid so we don't have to specify rigid cables that are more expensive and difficult to construct
  - Connects new components to receiver and each other
- Interconnect cables 4Wxxx, Wxxx, 90Wxxx
  - Shielded cables, all wired one-to-one as much as possible
  - Typically commercial DB cables
- Cable adapters 90Jxx
  - Adapts cables from one type to another so standard interconnect cables can be used
  - Example – RJ45 to DB9 adapter for serial cable between RCP and RMS
- Bulkhead adapter 4Jxx, 90Jxx
  - No cables run through bulkheads
  - Where available, all cables terminate on bulkhead adapters
  - No bulkhead adapters available for db connectors, so db connectors will attach similarly to legacy
- LAN cabling 90Wxxx
  - CAT 5 minimum for all LAN cables attached to LAN switch
  - CAT 5E minimum for direct crossover cable between RVP8 and RCP8/RCW
  - We are actually using CAT 5E for all LAN cabling
- Console cabling 90Wxxx
  - These cables are supplied by each of the manufacturers to connect to their respective console ports. We are using an 8 port serial card on the RCP8 to have enough serial inputs to handle all these consoles

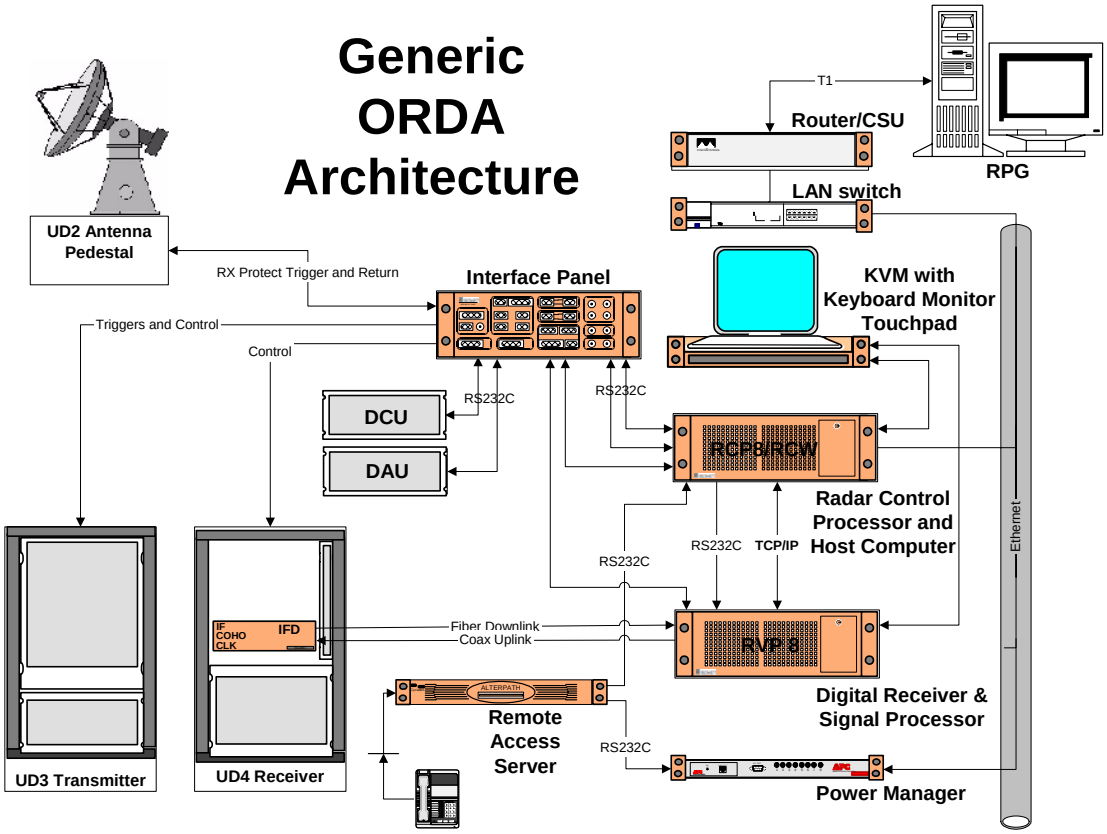
Generic
ORDA
Architecture
UD2 Antenna
Pedestal
RX Protect Trigger and Return
Interface Panel
Triggers and Control
Control
RS232C
DCU
DAU
RS232C
T1
Router/CSU
RPG
LAN switch
KVM with
Keyboard Monitor
Touchpad
RCPB/RCW
Radar Control
Processor and
Host Computer
RS232C
TCP/IP
RS232C
Ethernet
IF
COHO
CLK
IFD
Fiber Downlink
Coax Uplink
RVP 8
Digital Receiver &
Signal Processor
Remote
Access
Server
RS232C
Power Manager
UD3 Transmitter
UD4 Receiver

Figure 1